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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,246	12/27/1999	MARK W. SCHAEFERA	012006-00254	9751

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EXAMINER
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ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 06/18/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/473,246

Applicant(s)

SCHAEFERA ET AL.

Examiner

Martin J Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1 The response provided by the applicant has been read and given careful consideration.

No arguments were offered by the applicant, therefore no responses are provided by the examiner. The terminal disclaimers filed 2/5/2002 are proper and the double patenting rejections are withdrawn.

2 The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3 Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 at line 12, after "at least one", please insert - - sister- - to provide proper antecedent basis.

In claim 9, at lines 6-9, please indicate that the pattern in the mother shim is either directly transferred by pressing the mother shim against a metal die or indirectly transferred into said metal die by duplicating the pattern in a sister shim and pressing the sister shin against said metal die.

4 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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5        The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6        Claims 9,10,12-14,16 and 20-21 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Mentz et al. '657.

Mentz et al. '657 describes exposing a resist, typically formed to a thickness of 1-2 microns and developing the pattern, followed by electroforming a shim and hardening (8/26-10/32). The shim can then be used to directly emboss a metal surface to form an intermediate embossing tool which is hardened by application of an amorphous diamond coating to a thickness of 30-50 nm. (10/46-63) The shim may also be used to directly emboss aluminum can stock (10/33-45) The formation of intermediate and finishing tools which are cylindrical in shape is disclosed. (5/10-25) . One of the advantages is that the can does not need to be heated during embossing as in the prior art. (note the example which uses an embossing cylinder and text at 3/20-4/28). The use of a solid backing during embossing of the Al substrates is also disclosed. (10/33-45). The formation of several copies from the master is disclosed. (1/41-43 & 2/18-30). The formation of patterns in lid stock is disclosed. (6/55)

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With respect to claim 16 and those dependent upon it, the term "can bodies" has been interpreted as including the stock material used to form the can sidewalls as well as the material after it has been formed into the sidewalls.

With respect to the declarations, the examiner notes that figures 7 and 8 were not present in either of the parent applications and therefore can only be accorded the filing date of the instant application. The use of two embossing cylinders on opposite sides of the surface and the support of the cantilevering in the manner recited in claim 17-19 and the embodiments of claims 22-25 are accorded only the filing date of the instant application. The same is true for the use of photoresist having thicknesses of at least 3 microns which is relevant to claims 1-8 and 11. The specific description of the use of the inventive process in embossing metal foils, the use of lubricants and the use of carbon nitride films was not present in the originally filed application 08/991101, but are accorded the filing date of 10/16/1998 (that of parent application 09/166974). These are limitations recited in claims 3,6, and 24-25. The issue of metal foils was described in the 08/991101 application with respect to the prior art. The examiner notes that this application is a continuation in part of the parent application, which is a continuation in part of the originally filed application and therefore some of the subject matter recited in the claims is accorded later dates than the filing date of the original application. The applicant may wish to address these issues prior to requesting an interference to improve the likelihood of success.

The claims of the Mentz et al. '657 and the instant application are nearly identical. The only difference is the recited thickness of the resist and the hardness which are explicitly disclosed or implicitly taught based upon the hardening of the shims. To resolve this, the applicant must either amend the instant claims to step outside the envelope of coverage accorded

the Mentz et al. '657 patent or should file a declaration under 37 CFR 1/608(b) as set forth in MPEP 2308.02 to provoke an interference with that patent document, the filing date of which is accorded 11/26/1997,. Which is prior to the filing date of the instant application (12/12/1997). As both applicants are based in the US, both parties have a right to provide evidence to support their assertions of first to invent. The examiner notes that the disclosure of Mentz et al. '657 specifically discloses the embossing of Al cans (11/44-45) and the hardening of shims using sulfamate treatment (11/28-36) or amorphous diamond coatings (10/55-63). The rejection stands.

7 Claims 9-14,16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030.

Cowan et al. '571 teaches that the resists used to form phase or relief holograms are commonly formed in thicknesses of a fraction of a micron to a few microns. (2/40-45).

McGrew '030 exemplifies 3 micron thick resist used in forming a stamper. (6/13) The use of resists having thicknesses of 1-4 microns is also disclosed. (4/35-37)

It would have been obvious to one skilled in the art to modify the processes of Mentz et al. '657 by using other resist thicknesses, such as those over 3 microns taught by Cowan et al. '571 and/or McGrew '030, in place of those in the 1-2 micron range with a reasonable expectation of being able to form deeper features in the thicker resist than in thinner resists and as these are known in the art to be useful thicknesses.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

8 Claims 1,2,4,5,7,9-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769.

Pricone et al. '769 teaches the forming of an embossing master, electroforming to form a mother (reversed) image forming males, then females (held to be sisters), a second set of males and a second set of females (sisters) and using female images to emboss the desired pattern into the desired substrate. (figure 1 and corresponding text). The ability to make many embossing tools, each of which has a limited lifetime from one master is disclosed. The ruling process is disclosed as inefficient relative to the electroforming copying process. (5/35-6/20) The ability to assemble multiple copies of the original embossing tool to form larger patterns is disclosed. (3/8-14)

In addition to the basis provided above for the propriety of the combination of Mentz et al. '657 with Cowan et al. '571 and/or McGrew '030, the examiner holds that it would have been obvious to one skilled in the art to make copies of multiple intermediate copies of the shim of Mentz et al. '657 as modified by Cowan et al. '571 and/or McGrew '030 as taught by Pricone et al. '769 and Mentz et al. '657 to increase the size of the pattern to be formed and to form more members for the embossing of the stock material thereby increasing the number of embossed articles able to be formed from one original master or an increased pattern size able to be formed from a single master.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

9 Claims 1-5,7,9-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Smyth '212 and Trivett'956.

Smyth '212 teaches the use of lubricants when stamping Al can parts. The lubricant is disclosed as protecting the die press tooling. (1/15-34). These lubricants include butyl stearate (1/54-61)

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Trivett'956 teaches the use of lubricants in metalworking of formed beverage and food containers. These reduce the friction, power requirements, tool wear and heat generated during the metal working. (1/14-59) The use of fatty acids and butyl stearate is disclosed. (col. 3-4).

In addition to the basis provided above, the examiner holds that it would have been obvious to use lubricants, such as the fatty acids and stearates taught by Smyth '212 and Trivett'956, in the process of Mentz et al. '657, as modified by Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769 to protect the tolling from excessive wear, reduce power requirements and the heat and friction generated during the metal working process with a reasonable expectation of gaining these advantages.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

10 Claims 1-7,9-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Smyth '212, Trivett'956 and Hanehiro et al. JP 03-252936.

Hanehiro et al. JP 03-252936 teaches the use of carbon nitride as the embossing surface of a stamper. This is disclosed as resulting in a stamper of increased durability. (abstract)

In addition to the basis provided above, the examiner holds that it would have been obvious to one skilled in the art to modify the invention of Mentz et al. '657 as modified by Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769 Smyth '212 and Trivett'956 by using other hard coatings in place of amorphous diamond, such as the carbon nitride taught by Hanehiro et al. JP 03-252936, with a reasonable expectation of achieving a hard stamper surface.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.



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11 Claims 1-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Smyth '212, Trivett'956, Hanehiro et al. JP 03-252936, Mariotti FR 2474453 and Thibeault et al. '591.

Mariotti FR 2474453 teaches the embossing of can parts on both sides.

Thibeault et al. '591 teaches embossing can tops on both sides.

In addition to the basis provided above, it would have been obvious to modify the process of Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Smyth '212, Trivett'956 and Hanehiro et al. JP 03-252936 by using it to form can closures based upon the direction within Mentz et al. '657 to use the holographic embossing process to this and the teachings of Mariotti FR 2474453 and Thibeault et al. '591 that embossed can closures are old and well known in the art with a reasonable expectation of gaining the desired decorative effects.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

12 Claims 12,4,5,7,9-16 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Weitzen et al. '111 and Schmidt '370.

Weitzen et al. '111 teaches the embossing of thin aluminum foils with holographic patterns without the need for raising the temperature. (4/1-17) See figure 3 for the use of two rollers and figure 4 for the embossing on a completely formed can body.

Schmidt '370 teaches the mandrels which are cantilevered, but supported at both ends so that the can bodies may be formed.

In addition to the basis provided above with respect to Mentz et al. '657, as modified by Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, it would have been

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obvious to one skilled in the art to use cantilevered embossing rollers with support based upon the teachings of Weitzen et al. '111 that this is old and well known in the can art and Schmidt '370 which teaches the use of supporting members in embossing processes is old and well known in the can embossing art.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

13 Claims 12,4,5,7,9-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769, Weitzen et al. '111, Mariotti FR 2474453 and Thibeault et al. '591.

In addition to the basis provided above, the examiner holds that it would have been obvious to modify the process of Mentz et al. '657, in view of Cowan et al. '571 and/or McGrew '030 combined with Pricone et al. '769 by stamping patterns on both sides based upon the showing by Mariotti FR 2474453 and Thibeault et al. '591 that the use of stamping on both sides of can stock is old and well known and the teachings of the use of opposing rollers as old and well known in the art by Weitzen et al. '111. Further, if the language of can bodies extends to cover stock which does not have the can shape yet, it would have been obvious to one skilled in the art to emboss in different areas of the opposite sides, cut the patterned areas into strips and form cans which have the embossed patterns showing on the exterior of the can.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

14 Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weitzen et al. '111, in view of Mentz et al. '657 and Haiml et al. '572.

Haiml et al. '572 teaches with respect to figure 3, the embossing of Al foil with a sheet metal backing. (3/59-4/8).

It would have been obvious to one skilled in the art to add a backing support in the process of Weitzen et al. '111 taught with respect to figure 3, based upon the teachings of Mentz et al. '657 to do this when embossing Al with holographic patterns and Haiml et al. '572 to do so when embossing patterns into Al foils.

The response provided above is relied upon here without further comment as the issues raised have been addressed above.

15 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Angebranndt whose telephone number is (703) 308-4397.

I am normally available between 7:30 AM and 5:00 PM, Monday through Thursday and 7:30 AM and 4:00 PM on alternate Fridays.

If repeated attempts to reach me are unsuccessful, my supervisor may be reached at (703) 308-2464.

Facsimile correspondence should be directed to (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



Martin J. Angebranndt  
Primary Examiner, Group 1750  
June 14, 2002